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Insight SiP unveils miniature BLE smart module

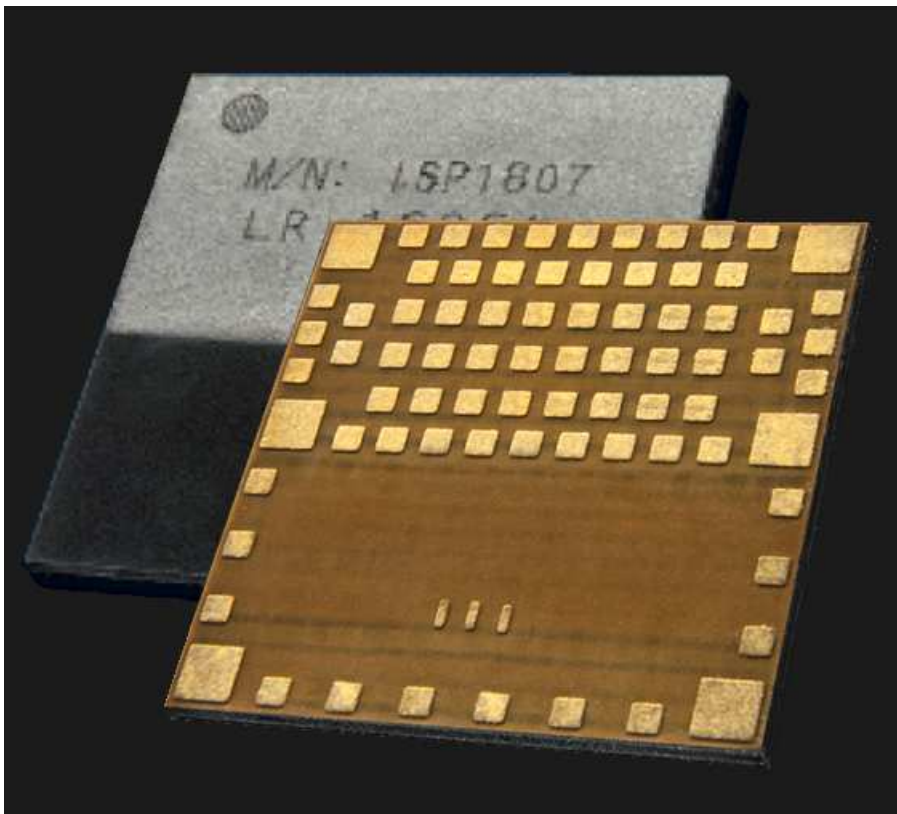
The ISP1807-LR is a Bluetooth 5.0 long-range compliant module in a miniature SIP package, targeting complex IoT applications

By Gina Roos, editor-in-chief

Insight SiP (<http://www.insightsip.com/>), a specialist in ultra-miniature RF modules, has introduced the ISP1807-LR module, touted as the first fully Bluetooth 5.0 long-range compliant RF module in a miniature SIP package. Housed in an 8 × 8 × 1-mm footprint, the miniature BLE module is based on Nordic Semiconductor's **nRF52840 chip** (<https://www.nordicsemi.com/eng/Products/nRF52840>). It provides a Bluetooth 5 stack including long range, high throughput, advertising extensions, and improved coexistence along with IPv6 connectivity and mesh capabilities, making the module well-suited as a hub for IoT solutions.

The ISP1807-LR module targets IoT solutions that require complex applications, fast processing, and/or best-in-class power consumption, according to Insight SiP. These include advanced wearables, smart-home and industrial sensors, advanced remote controls, gaming controllers and beacons.

Driving



The BLE smart module also integrates 32-MHz/32-KHz crystals, RF antenna and matching circuit, and DC-DC converter, delivering power-saving efficiency. Thanks to an M4 floating-point processor, the ISP1807-LR can run fast and advanced calculations as well as support sophisticated applications with its 1-MB flash and 256-kB RAM memory. An embedded Arm Cryptocell-310 on-chip processor provides security and cryptographic functions, which reduces CPU processing time and energy consumption. A USB interface is also available.

“The Nordic Semiconductor chip’s BT5 long-range feature is perfectly complemented by Insight SiP’s proven advanced ‘Antenna-in-Package’ technology, which allows customers to get the most out of the long-range capability,” said Insight SiP. “Bluetooth long range offers up to 4x the range of a standard BLE solution, enabling a new whole new set of use cases for BLE technology in domains such as smart buildings, lighting, agriculture, infrastructure management, and many others.”

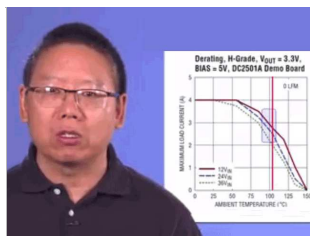
Protocol support includes BLE, THREAD, ANT/ANT+, and a range of proprietary 2.4-GHz protocols. An NFC Tag is available for OOB pairing. A full set of interfaces is integrated into the device for analog or digital peripherals including a configurable 46 GPIOs with 8 ADC and USB, SPI, I²C, and UART buses.

Free qualified BLE stacks for the nRF52840 are implemented in the S140 SoftDevices and enable the ISP1807-LR to be used in central, peripheral, observer, or broadcaster roles with up to 20 connections. Pin-to-pin compatibility with the ISP1507 (https://www.datasheets.com/pd/isp1507ebsum-st-ericsson-42216808.html?utm_medium=PartNumber&utm_source=electronicproducts&utm_term=ISP1507) provides an easy upgrade for existing designs. A development kit with sample software is available to get developers started on a new design.

Insight SiP’s products will be showcased by its distributors at electronica 2018 in the following stands: Texim Europe — Hall B5 #418; Tekmodul GmbH — Hall C3 #418; and Rutronik GmbH — Hall C4 #434 and Hall C3 #312.

By Gina Roos ([../UserControls/Profiles/Gina_Roos.aspx](https://www.electronicproducts.com/UserControls/Profiles/Gina_Roos.aspx))

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